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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,267	01/18/2002	Tsutomu Tanaka	9792909-5359	2710
26263	7590	12/17/2003	EXAMINER	
SONNENSCHN NATH & ROSENTHAL LLP			TRAN, THIEN F	
P.O. BOX 061080			ART UNIT	
WACKER DRIVE STATION, SEARS TOWER			PAPER NUMBER	
CHICAGO, IL 60606-1080			2811	

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/051,267

Applicant(s)

TANAKA ET AL.

Examiner

Thien F Tran

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2811

## **DETAILED ACTION**

### ***Drawings***

It is noted that applicant has requested the examiner to acknowledge receipt of three sheets of Proposed Drawing Corrections. However, the examiner is not able to find the three sheets of Proposed Drawing Corrections in the file; therefore, the examiner cannot acknowledge receipt of three sheets of Proposed Drawing Corrections. Please resubmit the three sheets of Proposed Drawing Corrections and the examiner will consider them.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of at least one electrode operatively and electrically connected to one of the active layer, an LDD region and a source-drain region sets forth a structure not supported by the specification. Applicant is requested to point out exactly wherein the application that provides the support for the limitation as claimed. In fact, Figures 1-3 show electrodes 17 and 18 connected only to the

Art Unit: 2811

protective insulating film 8. Therefore, electrodes 17 and 18 are not operatively and electrically connected to the active layer 7, LDD region 9 or source-drain region 10.

Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation of no etched mask structure within the thin film transistor sets forth a structure not supported by the specification.

Applicant is requested to point out exactly wherein the application that provides the support for the limitation as claimed. In fact, last paragraph of page 14 in the application discloses a resist mask being placed on the section having the TFT 100A and unwanted portions of the protective insulating film 8 and the polysilicon film 7 being etched. As a result, the present invention also uses etched mask structure in forming the device.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by  
Kawasaki et al. (USPN 6,281,552).

Art Unit: 2811

Kawasaki et al. discloses the claimed bottom-gate thin film transistor (Fig. 2C) comprising a gate electrode 104, a gate insulating film 105, an active layer 106, an LDD region 146, a source-drain region 149, and a protective insulating film 150 formed in that order on a substrate 101; and plurality of layers (151, 157, 158) formed over said protective film with one electrode (156, 161) extending therethrough that is operatively and electrically connected to one of the active layer; wherein the protective insulating film has a thickness of 100 nm, and the protective insulating film is formed on the active layer. The resist mask disclosed in col. 6, lines 24-30 and the new resist mask 126 in col. 7, lines 9-20 are removed and no longer existed in the final structure as shown in Fig 2C. Therefore, there is no etched mask structure within the thin film transistor structure.

Regarding claim 2, the active layer (crystalline silicon film 106) is formed by laser crystallization which inherently comprises a polysilicon film.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al. (USPN 6,281,552) in view of Yamazaki et al. (USPN 6,246,070).

Kawasaki et al. as described above does not disclose the protecting insulating film 150 having a thickness of 5 to 50 nm. However, forming a protecting insulating film

Art Unit: 2811

having the claimed thickness is known in the art as shown for example by Yamazaki et al. Yamazaki et al. discloses a protecting insulating film (105,108) having a thickness of 5 to 50 nm (Fig. 3). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to form the protecting insulating film of Kawasaki et al. having the claimed thickness as taught by Yamazaki et al. in order to protect the surface of the active layer 106 against pollution by impurities and reduce structure thickness to increase device density.


### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F Tran whose telephone number is (703) 308-4108. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

tt  
December 12, 2003

  
Thien F Tran  
Primary Examiner